

## OIB - P-3 Orion 03/29/17 Science Report

**Aircraft:**

[P-3 Orion](#) ([See full schedule](#))

**Date:**

Wednesday, March 29, 2017

**Mission:**

OIB

**Mission Location:**

Greenland

**Mission Summary:**

OIB completed the high priority North Ellesmere 01 mission. This was a new mission, designed as part of OIB's multi-year dh/dt repeat strategy, and based both on the ATM surveys of the Canadian ice caps dating back to 1995, and to flightlines designed with Dave Burgess and Martin Sharp as part of a CSA/NASA agreement in 2014 and flown that same year. This mission concentrates on the northern Ellesmere ice field and on the Agassiz Ice Cap in east-central Ellesmere. For the northern ice field, we flew a historical ATM line traversing the ice from southwest to northeast plus centerlines of the major glaciers draining the ice field. We also flew a number of such glaciers on Agassiz, along with a pair of historical ATM lines.

The weather forecast over Ellesmere Island looked to be largely clear near the beginning of the flight but worsening (mainly in the north) later in the day. We elected to take the mission as it seemed likely we would still be able to get coverage over most of the lines. The weather was largely good, but with patches of scattered haze and clouds at times. This did not significantly impact the mission though we did miss some small areas and the lower portion of Yelverton Glacier line due to poor visibility. The FLIR window frosted over early during the transit and took some time to clear up which will impact the data quality. But overall the mission was good, with data collected over nearly the entire line.

**Data volumes**

ATM: T5: 27 Gb      T6: 120 Gb

FLIR: 14 Gb

Cambot: 31 Gb

KT19: 10 Mb

DMS: 62 Gb

Snow/Ku radar: 1.2 Tb

MCoRDS: 1.6 Tb

Accumulation radar: 1.3 Tb

Gravity: 3 Gb

data on: 1146

data off: 1738

**Submitted by:**

Nathan T. Kurtz on 03/29/17

**File:**

 [nellesmere.pdf](#)

**Related Flight Report:**

### P-3 Orion 03/29/17

**Flight Number:**

Science Flight #12 - Ellesmere Island 01 Line

**Payload Configuration:**

OIB Arctic

**Nav Data Collected:**

No

**Total Flight Time:**

7.6 hours

**Submitted by:**

Janet Letchworth on 03/29/17

**Flight Segments:**

|               |                  |                |                  |
|---------------|------------------|----------------|------------------|
| <b>From:</b>  | BGTL             | <b>To:</b>     | BGTL             |
| <b>Start:</b> | 03/29/17 10:53 Z | <b>Finish:</b> | 03/29/17 18:28 Z |

|                    |  |     |              |
|--------------------|--|-----|--------------|
| Flight Time:       | 7.6 hours  |     |              |
| Log Number:        | <a href="#">17P006</a>                                 | PI: | Nathan Kurtz |
| Funding Source:    | Bruce Tagg - NASA - SMD - ESD Airborne Science Program |     |              |
| Purpose of Flight: | Science  |     |              |
| Comments:          | This flight covered the Ellesemere Island 01 Line.     |     |              |

**Flight Hour Summary:**

|                                       |               |
|---------------------------------------|---------------|
|                                       | <b>17P006</b> |
| <b>Flight Hours Approved in SOFRS</b> | 333.6         |
| <b>Total Used</b>                     | 307.1         |
| <b>Total Remaining</b>                | 26.5          |

**17P006 Flight Reports**

| Date                                | Flt #  | Purpose of Flight | Duration | Running Total | Hours Remaining |
|-------------------------------------|--|-------------------|----------|---------------|-----------------|
| <a href="#">02/24/17</a>            | Airworthiness Test Flight  | Check             | 1        | 1             | 332.6           |
| <a href="#">02/26/17</a>            | Project Test Flight #1   | Check             | 4.9      | 5.9           | 327.7           |
| <a href="#">02/27/17</a>            | Project Test Flight #2   | Check             | 3        | 8.9           | 324.7           |
| <a href="#">03/07/17</a>            | Transit Flight   | Transit           | 8.2      | 17.1          | 316.5           |
| <a href="#">03/09/17</a>            | Science Flight #1 - North Pole Transect                                    | Science           | 8        | 25.1          | 308.5           |
| <a href="#">03/10/17</a>            | Science Flight #2 - Laxon Line   | Science           | 8.5      | 33.6          | 300             |
| <a href="#">03/11/17 - 03/12/17</a> | Science Flight #3 - Chukchi West Line                                      | Science           | 8        | 41.6          | 292             |
| <a href="#">03/12/17 - 03/13/17</a> | Science Flight #4 - North Beaufort Loop Line                               | Science           | 8.1      | 49.7          | 283.9           |
| <a href="#">03/14/17 - 03/15/17</a> | Science Flight #5 - East Beaufort Loop Line                                | Science           | 8        | 57.7          | 275.9           |
| <a href="#">03/20/17</a>            | Science Flight #6 - Sea Ice South Basin Transect (to Thule)                | Science           | 8.1      | 65.8          | 267.8           |
| <a href="#">03/22/17</a>            | Science Flight #7 - North Flux 02  | Science           | 7.9      | 73.7          | 259.9           |
| <a href="#">03/23/17</a>            | Science Flight #8 - Zig Zag West Line                                      | Science           | 7.9      | 81.6          | 252             |
| <a href="#">03/24/17</a>            | Science Flight #9 - CryoVEx Line   | Science           | 5.8      | 87.4          | 246.2           |
| <a href="#">03/27/17</a>            | Science Flight #10 - Northwest Coastal A Line                              | Science           | 7.4      | 94.8          | 238.8           |
| <a href="#">03/28/17</a>            | Science Flight #11 - North Central Cap 01 Line                             | Science           | 7.6      | 102.4         | 231.2           |
| <a href="#">03/29/17</a>            | Science Flight #12 - Ellesmere Island 01 Line                              | Science           | 7.6      | 110           | 223.6           |
| <a href="#">03/30/17</a>            | Science Flight #13 - Ellesmere South Line                                  | Science           | 7.9      | 117.9         | 215.7           |
| <a href="#">03/31/17</a>            | Science Flight #14- Alexander-Petermann Line                               | Science           | 6.5      | 124.4         | 209.2           |
| <a href="#">04/03/17</a>            | Science Flight #15- Zachariae 79N Fram Straight and BGTL ENSB Transit      | Science           | 7.4      | 131.8         | 201.8           |
| <a href="#">04/05/17</a>            | Science Flight #16 - Svalbard North Line (High Priority)                   | Science           | 7        | 138.8         | 194.8           |
| <a href="#">04/06/17</a>            | Science Flight #17- Svalbard South Mission (High Priority)                 | Science           | 8.5      | 147.3         | 186.3           |
| <a href="#">04/07/17</a>            | Science Flight #18- Combined Zig Zag East Mission and Transit ENSB to BGTL | Science           | 8.3      | 155.6         | 178             |
| <a href="#">04/10/17</a>            | Science Flight #19- North Central Gap 3                                    | Science           | 7.8      | 163.4         | 170.2           |

|                          |  |         |     |       |       |
|--------------------------|--|---------|-----|-------|-------|
| <a href="#">04/11/17</a> | Science Flight #20- CryoVex 2 (High Priority)                    | Science | 7.8 | 171.2 | 162.4 |
| <a href="#">04/12/17</a> | Science Flight #21-Northwest Coastal C                           | Science | 7.2 | 178.4 | 155.2 |
| <a href="#">04/13/17</a> | Science Flight #22-North Glaciers 02 Prime (High Priority)       | Science | 8.2 | 186.6 | 147   |
| <a href="#">04/14/17</a> | Science Flight #23-IceSat-2 North/CryoSat-2 SARIn                | Science | 7   | 193.6 | 140   |
| <a href="#">04/17/17</a> | Science Flight #24-Humboldt 01(High Priority)                    | Science | 7.8 | 201.4 | 132.2 |
| <a href="#">04/19/17</a> | Science Flight #25-Sea Ice - South Canada Basin (MediumPriority) | Science | 7.8 | 209.2 | 124.4 |
| <a href="#">04/20/17</a> | Transit Flight to Kangerlussuaq                                  | Transit | 3   | 212.2 | 121.4 |
| <a href="#">04/21/17</a> | Science Flight #26-Southeast Coastal                             | Science | 8   | 220.2 | 113.4 |
| <a href="#">04/22/17</a> | Science Flight #27-Helheim-Kangerd                               | Science | 7.8 | 228   | 105.6 |
| <a href="#">04/24/17</a> | Science Flight #28-Geikie 01 (High Priority)                     | Science | 8   | 236   | 97.6  |
| <a href="#">04/26/17</a> | Science Flight #29-Devon-Bylot (Medium Priority)                 | Science | 7.9 | 243.9 | 89.7  |
| <a href="#">04/28/17</a> | Science Flight #30-Penny 01 (Medium Priority)                    | Science | 6   | 249.9 | 83.7  |
| <a href="#">04/29/17</a> | Science Flight #31-Thomas - Jakobshavn 01                        | Science | 8.4 | 258.3 | 75.3  |
| <a href="#">05/01/17</a> | Science Flight #32-Thomas - Jakobshavn-Eqip-Store                | Science | 8.4 | 266.7 | 66.9  |
| <a href="#">05/02/17</a> | Science Flight #33-Thomas - ICESat-2 Central                     | Science | 7.9 | 274.6 | 59    |
| <a href="#">05/03/17</a> | Science Flight #34-Thomas - Southwest Coastal A                  | Science | 8.3 | 282.9 | 50.7  |
| <a href="#">05/05/17</a> | Science Flight #35-Helheim-Kangerdlugssuaq Gap B (High Priority) | Science | 8.2 | 291.1 | 42.5  |
| <a href="#">05/06/17</a> | Science Flight #36-Helheim-K-EGIG-Summit                         | Science | 8   | 299.1 | 34.5  |
| <a href="#">05/08/17</a> | Science Flight #37-Southeast Glaciers 01 (High Priority)         | Science | 8   | 307.1 | 26.5  |

*Flight Reports began being entered into this system as of 2012 flights. If there were flights flown under an earlier log number the flight reports are not available online.*

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